



## REMARKS

Claims 1-40 are pending in this application. Claims 5, 6, 26, and 27 are amended herein to clarify and more particularly define the invention. Applicants note that these amendments do not narrow the scope of the claimed subject matter and no new matter is added by these amendments. The issues raised in the Office Action dated July 28, 2006 are addressed individually below in the order presented therein.

Further, enclosed herewith is a Supplemental Information Disclosure Statement (IDS). In the interest of full disclosure, we are submitting in the Supplemental IDS a letter from one of the inventors, Dr. Anne-Marie Stomp. As Dr. Stomp states, she has not tried to transform duckweed using electroporation techniques. Thus, her statements are purely conjecture.

### I. Specification.

The Office Action requests that the paragraph on page 1, line 6 under Related Application Information be updated.

Applicants have updated this paragraph to indicate that U.S. Application No. 09/971,754 has been abandoned. Accordingly, Applicants respectfully submit that the concerns of the examiner with regard to this matter have been addressed.

### II. Claim objections.

Claims 5, 6, 26, and 27 stand objected to for the recitation of "a species of."

Applicants have amended claims 5, 6, 26, and 27 to no longer recite "a species of." Accordingly, Applicants respectfully submit that the objection to claims 5, 6, 26, and 27 is overcome and respectfully request that it be withdrawn.

### III. Claim rejections under 35 U.S.C. § 112.

Claims 1-40 stand rejected under 35 U.S.C. § 112 for allegedly lacking enablement. Specifically, the Office Action states that while the specification is enabled for stably transformed duckweed plants, plant cells and tissues produced by Agrobacterium-mediated transformation, it allegedly does not provide enablement for stably transformed duckweed plants, plant cells and tissues produced by other methods. Office Action, page 2-3. Applicants respectfully disagree.

Applicants submit that the present application provides enablement for stably transformed duckweed plants, plant cells and tissues produced by methods additional to that using *Agrobacterium*. For example, Applicants would like to bring to the Examiner's attention the allowance of a corresponding application, U.S. Application Serial No. 10/273,974 (Notice of Allowance dated July 11, 2006). The claims of this application are directed to the stable transformation of duckweed using microparticle bombardment-mediated transformation techniques. Applicants note that upon issuance a patent is presumed valid. (See 35 U.S. C. § 282; MPEP § 1701). Accordingly, the claims of such a patent are considered enabled.

In further support of enablement of the present invention as regards stably transformed duckweed produced using microparticle bombardment-mediated transformation, Applicants submit a Declaration under 37 CFR § 1.132 from Dr. Lynn F. Dickey (*hereinafter*, "the Dickey Declaration"). The Dickey Declaration was originally submitted to the USPTO on March 24, 2006 for U.S. Application Serial No. 10/273,974. As described in the Dickey Declaration, stable transformation of *Lemna* was achieved using biolistic transformation as determined by  $\beta$ -glucuronidase (GUS) enzyme activity (histochemical staining), kanamycin resistance, PCR amplification of the neomycin phosphotransferase (NptII) and GUS genes, and Southern hybridization using a labeled probe directed against the GUS gene. The Dickey Declaration demonstrates stably transformed duckweed by microparticle bombardment transformation techniques using procedures that were substantially the same as those described in the present application. Thus, the present specification provides sufficient guidance to teach one skilled in the art to make stably transformed duckweed via microparticle bombardment.

Applicants respectfully submit that demonstration of successful stable transformation of duckweed via *Agrobacterium*-mediated transformation and microparticle bombardment is sufficient support for the presently claimed invention. As noted by the Examiner, a specification only needs to enable one method of making a claimed product. (Action, page 5). Specifically, the MPEP states "[a]s long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable resemblance to the entire scope of the claim, then the enablement requirement under 35 U.S.C. 112 is satisfied. Failure to disclose other methods by which the claimed invention may be made does not render a claim invalid

under 35 U.S.C. 112." (MPEP §2164 (c)). The Examiner, however, indicates that the claimed products produced via *Agrobacterium*-mediated transformation would differ structurally from those produced by other methods because of the presence of the T-DNA. (Action, page 5). However, this structural difference does not exist between microparticle bombardment, where T-DNA is not used, and other methods of direct gene transfer such as electroporation, silicon carbide fiber transformation technology, electrophoresis, polyethylene glycol mediated transformation, microinjection, etc. Thus, the demonstration of stably transformed duckweed via microparticle bombardment techniques, directly addresses the Examiner's concern.

Accordingly, Applicants respectfully submit that the present specification enables a person of skill in the art to make or use the invention commensurate in scope with claims of the present invention without undue experimentation. Therefore, Applicants respectfully submit that the rejection of claims 1-40 under 35 U.S.C. § 112 is overcome and respectfully request that it be withdrawn.

#### **IV. Double Patenting.**

A. Claims 1-20, and 22-40 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 3, 5-7, 20-29, and 39 of U.S. Patent No. 6,040,498. In addition, Claim 21 stands rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claim 44 of U.S. Patent No. 6,040,498 in view of Okubara et al. (*Plant Physiol.* 96:1237-1245 (1991)). Finally, Claims 1-40 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1, 4-6, 8, 12, 52, 58, 61, and 78-80 of Patent Application Serial No. 10/273,974.

These rejections are addressed by the submission of the terminal disclaimer enclosed herewith. Applicants note that the submission of this terminal disclaimer in no way represents an acquiescence to the outstanding rejections or an acknowledgment that the subject matter of the pending claims is obvious over the cited claims of U.S. Patent 6,040,498 alone or in combination with Okubara et al. or those of Patent Application Serial No. 10/273,974. Accordingly, Applicants respectfully submit that the

filing of a terminal disclaimer has obviated these double-patenting rejections, and respectfully request withdrawal of the rejections on this basis.

**B.** Claims 1-10, 12-31 and 33-40 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 1 and 22-25 of U.S. Patent No. 6,815,184. In addition Claims 11 and 32 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claim 1 of U.S. Patent No. 6,815,184 in view of Dieryck et al. (*Transfus. Clin. Biol.* 2:441-447 (1995)).

The present application and U.S. Patent No. 6,815,184 are not commonly owned or subject to a joint research agreement. The MPEP states "[o]bviousness-type double patenting requires rejection of an application claim when the claimed subject matter is not patentably distinct from the subject matter claimed in a commonly owned patent, or a non-commonly owned patent but subject to a joint research agreement as set forth in 35 U.S.C. 103(c)(2) and (3), when the issuance of a second patent would provide unjustified extension of the term of the right to exclude granted by a patent." (See MPEP § 804 (II); emphasis added). Since the present application and the cited patent are neither commonly owned nor subject to a joint research agreement, Applicants respectfully submit that a double patenting rejection is inappropriate. Accordingly, Applicants respectfully request the withdrawal of the rejections of the pending claims as being unpatentable over U.S. Patent No. 6,815,184 alone or in combination with Dieryck et al.

**C.** Claims 1-10, 12-31 and 33-40 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 1 and 22-25 of pending Application Serial No. 10/873,846.

Applicants point out that the present application and Application Serial No. 10/873,846 are not commonly owned or subject to a joint research agreement. As discussed above, an obviousness-type double patenting rejection requires that the applications/patents at issue be either commonly owned or non-commonly owned but subject to a joint research agreement. Since the present application and the cited patent application are neither commonly owned nor subject to a joint research



agreement, Applicants respectfully submit that a double patenting rejection is inappropriate. Accordingly, Applicants respectfully request the withdrawal of the rejections of the pending claims as being unpatentable over Application Serial No. 10/873,846.

**Conclusion.**

The points and concerns raised by the Examiner having been addressed in full, it is respectfully submitted that this application is in condition for allowance, which action is respectfully requested. Should there be any remaining concerns, the Examiner is encouraged to contact the undersigned attorney to expedite the prosecution of this application.

A check in the amount of \$120.00 for a one month extension of time is included herewith. This amount is believed to be correct. However, the Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-0220.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Karen Magri".

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A handwritten signature in cursive script, appearing to read "Amelia Tauchen".  
Amelia Tauchen